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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,334	03/31/2004	Reg Yang	2011154	8807

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20775 Norada Court
Saratoga, CA 95070-3018

EXAMINER

RIGGLEMAN, JASON PAUL

ART UNIT	PAPER NUMBER
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1746

MAIL DATE	DELIVERY MODE
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05/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/816,334

Applicant(s)

YANG ET AL.

Examiner

Jason P. Riggleman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: Foreign reference.

DETAILED ACTION

Status of Claims

1. Applicant's reply filed on 3/5/2007 is acknowledged. Current pending claims are 1-7. Claims 1-5 are amended. Claims 6-7 are new.

Claim Rejections - 35 USC § 112

2. Claims 1 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In regards to claim 1, the term "slantingly upwards" is unclear. For purposes of examination, this is assumed to be -- not perfectly vertically upwards. It should be noted that "up" and "down" are orientational terms which have no inherent frame of reference. In regards to claim 6, the term "opposite" is unclear since the in-room position of the first cleaning mechanism was not clearly defined.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

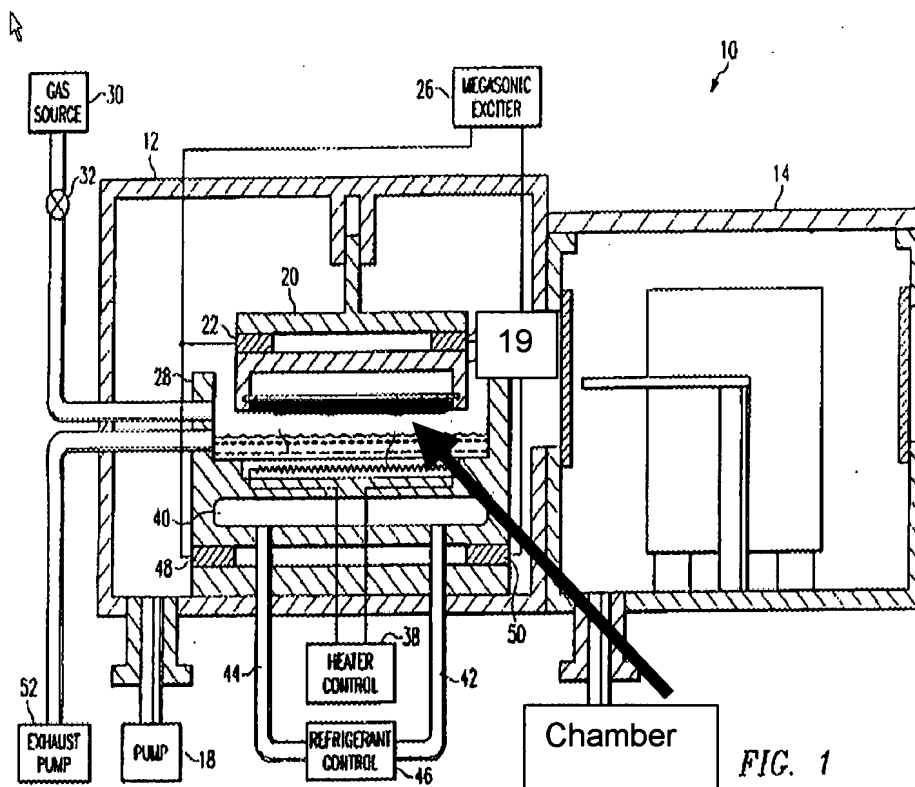
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being unpatentable by Paranjpe (US Patent No. 5494526).
5. Paranjpe teaches a cleaning system which comprises a cleaning room 12, with a cleaning agent 34, and a vacuum pump 18 arranged within the cleaning room 12. A combination of a substrate 16 and a frame layer (wafer chuck 19) are arranged to form

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a chamber (Column 2, Lines 57-60). The room 12 has a seal-up body – inherent in a room which is rapidly lowering the pressure in the room via a vacuum pump (Column 3, Lines 33-56). The substrate is disposed in the cleaning room and fixed to an upper portion of the sealed up body with the chamber facing downwards. A first cleaning mechanism (heater 36) is taught for ejecting a cleaning “slantingly upwards” to clean the chamber. The seal up body includes at least 3 walls – including a lower element, a periphery wall, and an upper cover, Fig 1. The cleaning agent 34 may be nitrogen or carbon dioxide (Column 5, Lines 5-31). The upper cover is connected to the periphery wall and the substrate is fixed to the upper cover, Fig. 1.

6.



7. Note: The applicant argues that Paranjpe teaches a vapor phase cleaning agent which is not ejected slantingly upwards but is vaporized upwards. The applicant claims the use of a gas cleaning agent (CO_2 or N_2) in claim 4 so this is not understood. The cleaning liquid of Paranjpe is heated and passes to the surface of the sample vaporization (part of which is random diffusion) – much of the cleaning liquid will pass through a slanting direction as passing upwards to the wafer. It appears the applicant is arguing a nozzle spraying a cleaning liquid at 45° relative to the force of gravity from the drawings; however, this has not been claimed.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paranjpe (US Patent No. 5494526).

10. In regards to claim 5, Paranjpe does not teach the use of water as a cleaning liquid; however, water is ubiquitous in the art of cleaning processes. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Paranjpe to create a cleaning device capable of supplying water which is cheap, effective, and a standard cleaning solvent.

11. In regards to claim 6, Paranjpe does not teach two cleaning mechanisms; however, it has been held that duplication of parts is obvious (*In re Harza*, 124 USPQ

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378). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Paranjpe to create a cleaning system which has a higher (double cleaning mechanisms) capacity for cleaning larger specimens.

Response to Amendment

12. The amendments filed 3/5/2007 are sufficient to overcome the drawing objections. Also, the objections to the specification are withdrawn.

Response to Arguments

13. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection. The 112 second paragraph rejections of the claims are withdrawn in view of the amendments.

Allowable Subject Matter

14. Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Masahiko (Japanese Patent Application Publication No. 59-150451) teaches a glass-sealed type semiconductor device. Shih (US Patent Application Publication No. US2002/0036004) teaches a substrate cleaning apparatus with two angled nozzles and an outlet between the nozzles.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason P. Riggelman whose telephone number is 571-272-5935. The examiner can normally be reached on M-F, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason P Riggleman
Examiner
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JPR



MICHAEL BARR
SUPERVISORY PATENT EXAMINER